

# DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below at 201 et seq. underneath my name.

I believe I am the original, first and sole inventor if only one name is listed at 201 below, or an original, first and joint inventor if plural names are listed at 201 et seq. below, of the subject matter which is claimed and for which a patent is sought on the invention entitled

**THERAPEUTIC AND DIAGNOSTIC METHODS AND COMPOSITIONS BASED ON NOTCH PROTEINS AND NUCLEIC ACIDS**

the specification of which:

☐ is attached hereto

☒ was filed in the United States on June 25, 1993 as Application Serial No. 08/083,590 (for declaration not accompanying application)  
with amendment(s) filed on \_\_\_\_\_ (if applicable)

☐ was filed as PCT international application Serial No. \_\_\_\_\_ on \_\_\_\_\_ and was amended under PCT  
Article 19 on \_\_\_\_\_ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119/§172 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

EARLIEST FOREIGN APPLICATION(S), IF ANY, FILED PRIOR TO THE FILING DATE OF THE APPLICATION			
APPLICATION NUMBER	COUNTRY	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 U.S.C. 119/172
			YES <input type="checkbox"/> NO <input type="checkbox"/>
			YES <input type="checkbox"/> NO <input type="checkbox"/>
			YES <input type="checkbox"/> NO <input type="checkbox"/>
			YES <input type="checkbox"/> NO <input type="checkbox"/>

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION SERIAL NO.	FILING DATE	STATUS		
		PATENTED	PENDING	ABANDONED
07/955,012	September 30, 1992		X	
07/879,038	April 30, 1992		X	


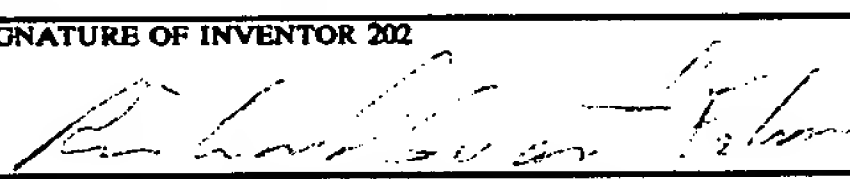
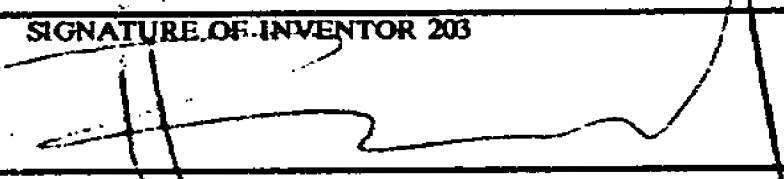
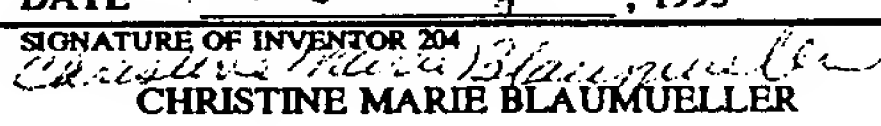
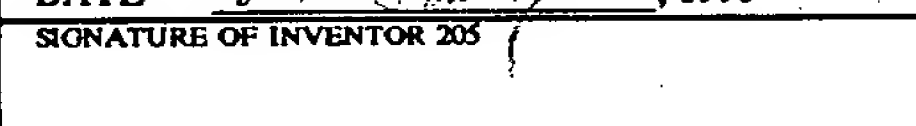
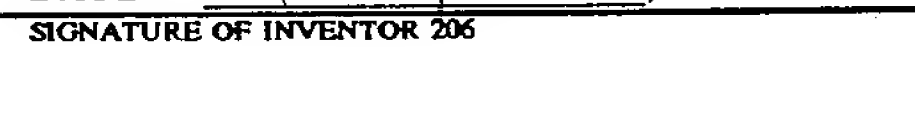
**POWER OF ATTORNEY:** As a named inventor, I hereby appoint S. Leslie Misrock (Reg. No. 18872), Harry C. Jones, III (Reg. No. 20280), Berj A. Terzian (Reg. No. 20060), Gerald J. Flintoft (Reg. No. 20823), David Weild, III (Reg. No. 21094), Jonathan A. Marshall (Reg. No. 24614), Barry D. Rein (Reg. No. 22411), Stanton T. Lawrence, III (Reg. No. 25736), Isaac Jarkovsky (Reg. No. 22713), Joseph V. Colaianni (Reg. No. 20019), Charles E. McKenney (Reg. No. 22795), Philip T. Shannon (Reg. No. 24278), Francis E. Morris (Reg. No. 24615), Charles E. Miller (Reg. No. 24576), Gidon D. Stern (Reg. No. 27469), John J. Lauter, Jr. (Reg. No. 27814), Brian M. Poissant (Reg. No. 28462), Brian D. Coggio (Reg. No. 27624), Rory J. Radding (Reg. No. 28749), Stephen J. Harbulak (Reg. No. 29166), Donald J. Goodell (Reg. No. 19766), James N. Palik (Reg. No. 25510), Thomas E. Friebe (Reg. No. 29258), Laura A. Coruzzi (Reg. No. 30742), Jennifer Gordon (Reg. No. 30753), Jon R. Stark (Reg. No. 30111), Allan A. Fanucci (Reg. No. 30256), Geraldine F. Baldwin (Reg. No. 31232), and Victor N. Balancia (Reg. No. 31231), whose address is Pennie & Edmonds, 1155 Avenue of the Americas, New York, New York 10036, and each of them, my attorneys, to prosecute this application, and to transact all business in the Patent and Trademark Office connected therewith.

SEND CORRESPONDENCE TO: PENNIE & EDMONDS  
1155 AVENUE OF THE AMERICAS  
NEW YORK, N.Y. 10036-2711

DIRECT TELEPHONE CALLS TO:  
PENNIE & EDMONDS  
(212) 790-9090

201	FULL NAME OF INVENTOR	LAST NAME ARTAVANIS-TSAKONAS	FIRST NAME SPYRIDON	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY HAMDEN	STATE OR FOREIGN COUNTRY CONNECTICUT	COUNTRY OF CITIZENSHIP UNITED STATES	
	POST OFFICE ADDRESS	POST OFFICE ADDRESS 192 RIDGEWOOD AVENUE	CITY HAMDEN	STATE OR COUNTRY CONNECTICUT	ZIP CODE 06517
202	FULL NAME OF INVENTOR	LAST NAME FEHON	FIRST NAME RICHARD	MIDDLE NAME GRANT	
	RESIDENCE & CITIZENSHIP	CITY DURHAM	STATE OR FOREIGN COUNTRY NORTH CAROLINA	COUNTRY OF CITIZENSHIP UNITED STATES	
	POST OFFICE ADDRESS	POST OFFICE ADDRESS 2714 DOGWOOD ROAD	CITY DURHAM	STATE OR COUNTRY NORTH CAROLINA	ZIP CODE 27705
203	FULL NAME OF INVENTOR	LAST NAME ZAGOURAS	FIRST NAME PANAYIOTIS	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY NEW HAVEN	STATE OR FOREIGN COUNTRY CONNECTICUT	COUNTRY OF CITIZENSHIP GREECE	
	POST OFFICE ADDRESS	POST OFFICE ADDRESS 595 ORANGE STREET	CITY NEW HAVEN	STATE OR COUNTRY CONNECTICUT	ZIP CODE 06511
204	FULL NAME OF INVENTOR	LAST NAME BLAUMUELLER	FIRST NAME CHRISTINE	MIDDLE NAME MARIE	
	RESIDENCE & CITIZENSHIP	CITY NEW HAVEN	STATE OR FOREIGN COUNTRY CONNECTICUT	COUNTRY OF CITIZENSHIP UNITED STATES	
	POST OFFICE ADDRESS	POST OFFICE ADDRESS 28 COTTAGE STREET	CITY NEW HAVEN	STATE OR COUNTRY CONNECTICUT	ZIP CODE 06511
205	FULL NAME OF INVENTOR	LAST NAME	FIRST NAME	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP	
	POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE OR COUNTRY	ZIP CODE
206	FULL NAME OF INVENTOR	LAST NAME	FIRST NAME	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP	
	POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE OR COUNTRY	ZIP CODE

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201 	SIGNATURE OF INVENTOR 202 	SIGNATURE OF INVENTOR 203 
SPYRIDON ARTAVANIS-TSAKONAS DATE <u>20 July</u> , 1993	RICHARD GRANT FEHON DATE <u>27 July</u> , 1993	PANAYIOTIS ZAGOURAS DATE <u>7/20</u> , 1993
SIGNATURE OF INVENTOR 204  CHRISTINE MARIE BLAUMUELLER DATE <u>July 20</u> , 1993	SIGNATURE OF INVENTOR 205 	SIGNATURE OF INVENTOR 206 

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of : Attn: Application Division,  
Artavanis-Tsakonas et al. : Special Handling Unit  
:  
Serial No.: 08/083,590 : Group Art Unit:  
:  
Filed: June 25, 1993 : Examiner:  
:  
For: THERAPEUTIC AND DIAGNOSTIC :  
METHODS AND COMPOSITIONS :  
BASED ON NOTCH PROTEINS AND :  
NUCLEIC ACIDS : Pennie & Edmonds  
:  
Attorney Docket No.: 7326-015 : 1155 Avenue of the Americas  
:  
New York, New York 10036

TRANSMITTAL OF DECLARATION AFTER FILING  
DATE PURSUANT TO 37 C.F.R. § 1.53(d)

Honorable Commissioner of Patents and Trademarks  
Washington, D.C. 20231

S I R :

Applicants submit herewith a Declaration and Power of Attorney for the application executed by inventors Spyridon Artavanis-Tsakonas, Panayiotis Zagouras and Christine Marie Blaumueller on July 20, 1993, and inventor Richard Grant Fehon on July 27, 1993.

In addition, Applicants submit herewith an Assignment of the Application to YALE UNIVERSITY. Said Assignee qualifies as a small entity under 37 C.F.R. 1.9(f) and 1.27(d). A Verified Statement Claiming Small Entity Status [37 C.F.R. 1.9(f) and 1.27(d)] is submitted concurrently herewith.

EXPRESS MAIL CERTIFICATION

"Express Mail" label No. TB 389-222 812 US

Date of Deposit August 13, 1993

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

ISMAEL MALDONADO

(Type or print name of person mailing paper or fee)

(Signature of person mailing paper or fee)

PENY-201879.1

The fee required to be filed with the accompanying Declaration under 37 C.F.R. § 1.16(e) has been estimated to be \$65.00 (small entity). Please charge the required fee to Pennie & Edmonds Deposit Account No. 16-1150. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

PENNIE & EDMONDS  
Attorneys for Applicants

Date: August 13, 1993

(212) 790-9090

S. Leslie Misrock 18,872  
S. Leslie Misrock (Reg. No.)

by Adriane Antler  
Reg. No. 32,605

# ASSIGNMENT

JOINT

WHEREAS, WE, SPYRIDON ARTAVANIS-TSAKONAS, RICHARD GRANT FEHON, PANAYIOTIS ZAGOURAS and CHRISTINE MARIE BLAUMUELLER (herein called "ASSIGNORS"); citizens of the United States, the United States, Greece, and the United States, respectively; respectively residing at 192 Ridgewood Avenue, Hamden, Connecticut 06517, 2714 Dogwood Road, Durham, North Carolina 27705, 595 Orange Street, New Haven, Connecticut 06511, and 28 Cottage Street, New Haven, Connecticut 06511; are the inventors of the invention in THERAPEUTIC AND DIAGNOSTIC METHODS AND COMPOSITIONS BASED ON NOTCH PROTEINS AND NUCLEIC ACIDS for which we have executed an application for a Patent of the United States

- ☒ which is identified by Pennie & Edmonds docket no. 7326-015
- ☒ which was filed on June 25, 1993, Serial No. 08/083,590

and WHEREAS, YALE UNIVERSITY, a not-for-profit corporation organized and existing under the law of the State of Connecticut, having an address at 451 College Street, New Haven, Connecticut 06520 (herein called "ASSIGNEE"), is desirous of obtaining the entire right, title and interest in, to and under the said invention and the said application:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) to us in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, the entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

AND WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

IN TESTIMONY WHEREOF, We hereunto set our hands and seals the day and year set opposite our respective signatures.

Date 20 July, 1993 [Signature] L.S.  
SPYRIDON ARTAVANIS-TSAKONAS

State of CONNECTICUT )  
County of NEW HAVEN ) SS.:

On this 20<sup>th</sup> day of JULY, 1993, before me, a Notary Public in and for the State and County aforesaid, personally appeared SPYRIDON ARTAVANIS-TSAKONAS, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

LAURIE A. CAGNETTA  
NOTARY PUBLIC

MY COMMISSION EXPIRES MARCH 31, 1994

Date July 27<sup>th</sup>, 1993 [Signature] L.S.  
RICHARD GRANT FEHON

State of North Carolina )  
County of Durham ) SS.:

On this 27<sup>th</sup> day of July, 1993, before me, a Notary Public in and for the State and County aforesaid, personally appeared RICHARD GRANT FEHON, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

[Signature]  
My commission expires: 8/21/95 Notary Public.

Date 7/20 1993 PANAYIOTIS ZAGOURAS L.S.

State of CONNECTICUT )  
County of NEW HAVEN ) SS.:

On this 20<sup>th</sup> day of JULY, 1993, before me, a Notary Public in and for the State and County aforesaid, personally appeared PANAYIOTIS ZAGOURAS, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

LAURIE A. CAGNETTA  
NOTARY PUBLIC Laurie A. Cagnetta  
MY COMMISSION EXPIRES MARCH 31, 1994 Notary Public.

Date July 20, 1993, 1993 Christine Marie Blaumueller L.S.  
CHRISTINE MARIE BLAUMUELLER

State of CONNECTICUT )  
County of NEW HAVEN ) SS.:

On this 20<sup>th</sup> day of July, 1993, before me, a Notary Public in and for the State and County aforesaid, personally appeared CHRISTINE MARIE BLAUMUELLER, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and she acknowledged the same to be her free act and deed.

LAURIE A. CAGNETTA  
NOTARY PUBLIC Laurie A. Cagnetta  
MY COMMISSION EXPIRES MARCH 31, 1994 Notary Public.



RECORDATION FORM COVER SHEET  
PATENTS ONLYAttorney Docket Number  
7326-015TO THE HONORABLE COMMISSIONER OF PATENTS AND TRADEMARKS  
Box Assignments  
Washington, DC 20231

Please record the attached original documents or copy thereof.

## 1. Name of conveying party(ies):

SPYRIDON ARTAVANIS-TSAKONAS, RICHARD GRANT  
FEHON, PANAYIOTIS ZAGOURAS, and CHRISTINE  
MARIE BLAUMUELLERAdditional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

## 2. Name and address of receiving party(ies):

Name: YALE UNIVERSITYAddress: 451 College StreetNew Haven, Connecticut 06520

Country (if other than USA): \_\_\_\_\_

Additional name(s) and address(es) attached?

☐ Yes ☒ No

## 3. Nature of conveyance:

☒ Assignment☐ Merger☐ Security Agreement☐ Change of Name☐ Other \_\_\_\_\_Execution Date: Spyridon Artavanis-Tsakonas, Panayiotis  
Zagouras, and Christine Marie Blaumueller on July 20, 1993;  
Richard Grant Fehon on July 27, 1993

## 4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: \_\_\_\_\_

A. Patent Application No.(s) 08/083,590

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No5. Name and address of party to whom correspondence  
concerning document should be mailed:PENNIE & EDMONDS  
1155 Avenue of the Americas  
New York, NY 10036

Attention: S. Leslie Misrock, Esq.

6. Number of applications  
and patents involved: 17. Total fee (37 CFR 3.41): .....\$ 40.00  
Please charge to the deposit account listed in Section 8.8. Deposit account number:  
16-1150  
(A copy of this page is attached)

DO NOT USE THIS SPACE

## 9. Statement and signature.

*To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.*S. Leslie Misrock 18,872  
Name of Person Signing Reg. No.S. Leslie Misrock  
Signatureby Adriane Antler  
Reg. No. 32,605August 13, 1993  
DateTotal number of pages including cover sheet: 3

## EXPRESS MAIL CERTIFICATION

"Express Mail" label No. TB 389 222 812 USDate of Deposit August 13, 1993

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

ISMAEL MAYDONADO

(Type or print name of person mailing paper or fee)

(Signature of person mailing paper or fee)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: ☒ Application of: Artavanis-Tsakonas et al.  
☐ Patent of:

☒ Serial No.: 08/083,590  
☐ Patent No.:

Group Art Unit:

☒ Filed: June 25, 1993  
☐ Issued:

Examiner: To be assigned

For: THERAPEUTIC AND DIAGNOSTIC  
METHODS AND COMPOSITIONS  
BASED ON NOTCH PROTEINS AND  
NUCLEIC ACIDS

Attorney Docket No.: 7326-015

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS  
[37 CFR 1.9(f) and 1.27(d)] - Nonprofit Organization

Honorable Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

I hereby declare that I am an official empowered to act on behalf of the nonprofit organization identified below:

Name of organization Yale University  
Address of organization 451 College Street  
New Haven, Connecticut 06520

Type of organization

- ☒ University or other institution of higher education  
☐ Tax exempt under Internal Revenue Service Code (26 USC 501(a) and 501(c)(3))  
☐ Nonprofit scientific or educational under statute of state of the United States of America  
(Name of state \_\_\_\_\_)  
(Citation of statute \_\_\_\_\_)  
☐ Would qualify as tax exempt under Internal Revenue Service Code (26 USC 501(a) and 501(c)(3)) if located in the United States of America.  
☐ Would qualify as nonprofit scientific or educational under statute of state of the United States of America if located in the United States of America  
(Name of state \_\_\_\_\_)  
(Citation of statute \_\_\_\_\_)

I hereby declare that the nonprofit organization identified above qualifies as a nonprofit organization as defined in 37 CFR 1.9(e) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code with regard to the invention entitled THERAPEUTIC AND DIAGNOSTIC METHODS AND COMPOSITIONS BASED ON NOTCH PROTEINS AND NUCLEIC ACIDS by inventor(s) Spyridon Artavanis-Tsakonas et al., described in



☐ the specification filed herewith  
☒ application serial no. 08/083,590 filed June 25, 1993  
☐ patent no. \_\_\_\_\_ issued

I hereby declare that rights under contract or law have been conveyed to and remain with the nonprofit organization identified above and/or there is an obligation under contract or law by the inventor(s) to convey rights to the nonprofit organization identified above with regard to the invention.

If the rights held by the nonprofit organization are not exclusive, each individual, concern or organization having rights to the invention is listed below\* and no rights to the invention are held by any person, other than the inventor, who could not qualify as an independent inventor under 37 CFR 1.9(c) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

FULL NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_

☐ INDIVIDUAL      ☐ SMALL BUSINESS CONCERN      ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. [37 CFR 1.28 (b)]

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, and patent issuing thereon, or any patent to which this verified statement is directed.

Send correspondence to:      PENNIE & EDMONDS      Direct Telephone calls to:  
1155 Avenue of the Americas      PENNIE & EDMONDS  
New York, N.Y. 10036-2711      (212) 790-9090

Name of person signing      Robert K. Bickerton, Ph.D.  
Title of person other than owner      Director, Office of Cooperative Research  
Address of person signing      246 Church Street  
New Haven, Connecticut 06510  
Signature      Robert K. Bickerton      Date      7/19/93

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities.